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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,907	02/20/2002	Tomohiro Chiba	018842.1204	2651

24735 7590 03/23/2004

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EXAMINER

LEO, LEONARD R

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 03/23/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/077,907

Applicant(s)

CHIBA, TOMOHIRO

Examiner

Leonard R. Leo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

The amendment filed on January 5, 2004 has been entered. Claims 1-2 and 4-5 are pending.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohara et al (Figures 3-6 and 8). The parallel sections between outer fins 3 in Figure 1 are read as a “plurality of heat transfer tubes.” Regarding claim 2, the recitation of “formed by deforming” is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al in view of Donaldson, Kato or Watanabe et al.

Ohara et al discloses all the claimed limitations except a flange portion folded along a central axis.

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Donaldson discloses a heat exchanger comprising a plurality of stacked tubes 12 and fins *f* (Figure 1), the tube formed by a folded tube plate (14, 16) along flange portion (18, 19, 23) (Figure 2) for the purpose of ease of manufacture.

Kato discloses a heat exchanger comprising a plurality of tubes 2 and fins 3 (Figure 1), the tube formed by a folded tube plate 14 along flange portion 20 (Figure 6) for the purpose of ease of manufacture.

Watanabe et al discloses a heat exchanger comprising a plurality of tubes 11 and fins 14 (Figure 1), the tube formed by a folded tube plate 20 along flange portion 32 for the purpose of ease of manufacture.

Since Ohara et al and Donaldson, Kato or Watanabe et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Donaldson, Kato or Watanabe et al would have been recognized in the pertinent art of Ohara et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ohara et al a folded flange portion for the purpose of ease of manufacture as recognized by Donaldson, Kato or Watanabe et al.

Regarding claims 2 and 5, the recitation of “formed by deforming” is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

### ***Response to Arguments***

The drawings objection under 37 CFR 1.83(a) is withdrawn, since Figures 10-12 depict the claimed subject matter.

The objection to claim 2 is withdrawn.

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Applicant's arguments have been fully considered but they are not persuasive. However, applicant's remarks with respect to the specification are not commensurate in scope with the claims. The projection portions 50 are located on the inside of the tube and do not affect communication with the drain path 56 located external to the tube. Applicant is relying upon a structure (i.e. recess portion 54 or guide 55) that is neither claimed nor inherent with the corresponding projection portion 50. Furthermore, the claims broadly recite a "heat exchanger" to be employed in no specific environment. Therefore, drainage may or may not be present in a desired working environment. The Examiner believes the instant invention can be claimed to structurally define over Ohara et al.

The Examiner agrees Ohara et al discloses a crisscross pattern 12 on the inner surface of tube half 7 in Figure 8. However, each projection portion extending in the oblique direction in Figure 8 of Ohara et al is read as being discontinuous. The claim does not recite with specificity a *discontinuous* projection extending across the entire width direction at an oblique direction. Upon further review, in-house USPTO staff has unofficially verbally translated page 6 of Ohara et al. With respect to Figures 7a-9, the Examiner has learned that the internal surface of the tube halves 7 is roughened to enhance heat transfer in the various manners depicted. While the claim is still believed met by Figure 8 of Ohara et al, prior art to disclose discontinuous projections extending across the entire width direction at an oblique direction is readily available.

With respect to the obviousness rejection, applicant does not argue that the secondary references teach forming a tube by folding a single sheet in half for the purpose of ease of manufacture is well known. Instead, applicant believes the secondary references do not teach or

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disclose what the primary reference of Ohara et al is relied to disclose, namely the oblique projection portion.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO  
PRIMARY EXAMINER  
ART UNIT 3743

March 18, 2004